UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,559	06/25/2003	Deepak Bansal	CML00497NR	5463

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EXAMINER
SU, BENJAMIN

ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/603,559	BANSAL ET AL.
	Examiner	Art Unit	
	Benjamin Su	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2003*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *02/02/2004*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 1, 4, 5, 9, 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claim 1, ines 5 – 6, the term "modified queue weights" is vague and indefinite because it is not known the metes and bounds of the claimed invention.

For claim 4, line 2, the term "the channel quality information" has no antecedent basis.

For claim 5, line 3, the term "the set of preemption values" has no antecedent basis.

For claim 9, line 2, the term "the channel conditions" has no antecedent basis.

For claim 12, lines 2 – 3, the term "the original queue weights" has no antecedent basis.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 4, 6 - 10 are rejected under 35 U.S.C. 102(b) as being anticipated by

Giroux et al. (US 6317416).

Giroux et al. disclosed, regarding claim 4, an apparatus comprising:

a bandwidth allocation adaptor (see column 2, lines 50 – 54, wherein service

weight manager corresponds to bandwidth allocation adaptor) having a channel quality

vector (a) as an input (see column 3, lines 53 – 57, wherein the Queue Grow Rate of

output queue, the arrival rate correspond to channel quality vector) and outputting a set

of queue weights (B') based on the channel quality information (see column 2, lines 50 –

52, column 3, lines 66 – 67, column 4, lines 1 – 3, lines 41 – 44, wherein Step 30 runs

through all the Wi in the ordered list L and step 31 updates the weight table correspond

to outputting a set of queue weights)

Regarding claim 6, the bandwidth allocation adaptor additionally has a set of

original queue weights (B) as an input (see column 3, lines 20 – 22, wherein

minimum Weight table corresponds to a set of original queue weights), wherein the

queue weights are additionally based on the set of original queue weights (see column

4, lines 35 – 40, wherein Wi corresponds to queue weights and min_Wi corresponds to

original queue weights).

Regarding claim 7, a packet scheduler having B' as an input (see column 2, lines

50 – 54, wherein the service weights correspond to B' and WFQ Scheduler corresponds

to a packet scheduler), and scheduling packets based on B' (see column 4, lines 1 – 3).

Regarding claim 8, a plurality of data queues coupled to the packet scheduler

(see column 2, lines 36 – 38), wherein each data queue within the plurality of data

queues has an associated service-level (see column 3, lines 25 – 33, TABLE 2, Queuei,

Category, wherein Category CBR, RT-VBR, NRT-VBR, UBR correspond to service-

level agreement associated with each queue).

Regarding claim 9, a method comprising:

receiving channel conditions (o) (see column 3, lines 53 – 57, wherein the Queue

Grow Rate of output queue, the arrival rate correspond to channel quality vector); and

calculating queue weights (B') based on the channel conditions information (see column

2, lines 50 – 52, column 3, lines 66 – 67, column 4, lines 1 – 3, lines 41 – 44).

Regarding claim 10, outputting the queue weights to a packet scheduler,

wherein the packet scheduler utilizes the queue weights for scheduling packets (see

column 4,lines 41 – 44, wherein Step 30 runs through all the Wi in the ordered list L and

step 31 updates the weight table correspond to outputting the queue weights to a

packet scheduler).

Claim Rejections - 35 USC § 103

5.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

6.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

      1.   Determining the scope and contents of the prior art.
      2.   Ascertaining the differences between the prior art and the claims at issue.
      3.   Resolving the level of ordinary skill in the pertinent art.
      4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1 – 3, 5, 11 - 14 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Giroux et al. in view of Firoiu et al. (US 6820128).

      Giroux et al. disclosed, regarding claim 1, an apparatus comprising:

      a bandwidth allocation adaptor (see column 2, lines 50 – 54, wherein service

weight manager corresponds to bandwidth allocation adaptor) having as an input a first

set of queue weights (see column 3, lines 20 – 22, wherein minimum Weight table

corresponds to a first set of queue weights), channel quality information (see column 3,

lines 53 – 57, wherein the Queue Grow Rate of output queue, the arrival rate

correspond to channel quality information) and outputting modified queue weights

(see column 4, lines 41 – 44) based on the first set of queue weights, the channel

quality information (see column 4, lines 5 – 7, wherein the queue weights, Wi,

correspond to modified queue weights, line 15, 35 – 40).

Regarding claim 2, the apparatus of claim 1 further comprising a packet

scheduler (see column 4, lines 42 – 43, wherein Weighted Fair Queuing scheduler

corresponds to a packet scheduler) having the modified queue weights as an input

(see column 2, lines 46 – 48, column 4, lines 41 – 43, wherein step 31 updates the

weight table used by the Weight Fair Queue scheduler corresponds to having the

modified queue weights as an input), and scheduling packets based on the

modified queue weights (see column 2, lines 50 – 52, column 4, lines 1 - 3).

Regarding claim 3, the apparatus of claim 2 further comprising: a plurality of data

queues coupled to the packet scheduler (see column 2, lines 36 – 38), wherein each

data queue within the plurality of data queues has an associated service-level

agreement (see column 3, lines 25 – 33, TABLE 2, Queuei, Category, wherein Category

CBR, RT-VBR, NRT-VBR, UBR correspond to service-level agreement associated with

each queue).

Giroux et al. fail to teach a bandwidth allocation adaptor having as an input the

preemption values and outputting modified queue weights based on the preemption

values as recited in claim 1.

Firoiu et al. from the same or similar field of endeavors teach a bandwidth

allocation adaptor (see column 5, lines 48 - 52, wherein loss sensitive buffer and delay

sensitive buffer correspond to a bandwidth allocation adaptor) having as an input the

preemption values (see column 7, lines 53 – 56, column 9, lines 10 – 20, wherein P1

the average drop rate of the loss sensitive buffer, P2 the average drop rate of the delay sensitive buffer correspond to the preemption values) and outputting modified queue weights based on the preemption values (see column 8 lines 13 – 18, 34, column 9, lines 29 – 37, wherein the values of W1 and W2 are modified correspond to modified queue weights).

Thus, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use a bandwidth allocation adaptor having as an input the preemption values and outputting modified queue weights based on the preemption values in the apparatus taught by Giroux et al. in order to provide a more fair relationship between the preemption values of different queues (see Firoui et al. column 9, lines 36 – 37).

Regarding claims 5, 11, 12, Giroux et al. disclosed all the subject matter of the claimed invention as recited in paragraph 4 of this office action and receiving original queue weights (B) (see column 3, lines 20 – 22, wherein minimum Weight table corresponds to original queue weights); and wherein the step of calculating the queue weights (B') comprises the step of additionally basing the calculation of the queue weights on the original queue weights (see column 4, lines 35 – 40, wherein Wi corresponds to the queue weights and min_Wi corresponds to the original queue weights) as recited in claim 12.

Giroux et al. fail to teach the bandwidth allocation adaptor additionally has

a set of preemption values (P) as an input, wherein the queue weights are additionally

based on the set of preemption values as recited in claim 5; receiving preemption

values (P); and wherein the step of calculating the queue weights (B') comprises the

step of additionally basing the calculation of the queue weights on the preemption

values as recited in claim 11.

Firoiu et al. from the same or similar field of endeavors teach the

bandwidth allocation adaptor (see column 5, lines 48 - 52, wherein loss sensitive buffer

and delay sensitive buffer correspond to the bandwidth allocation adaptor) additionally

has a set of preemption values (P) as an input (see column (see column 7, lines 53 –

56, column 9, lines 10 – 20, wherein P1 the average drop rate of the loss sensitive

buffer, P2 the average drop rate of the delay sensitive buffer correspond to a set of

preemption values), wherein the queue weights are additionally based on the set of

preemption values (see column 8 lines 13 – 18, 34, column 9, lines 29 – 37, wherein

the values of W1 and W2 are modified correspond to the queue weights) as recited in

claim 5 ; receiving preemption values (P) (see column (see column 7, lines 53 – 56,

column 9, lines 10 – 20, wherein P1 the average drop rate of the loss sensitive buffer,

P2 the average drop rate of the delay sensitive buffer correspond to a set of preemption

values); and wherein the step of calculating the queue weights (B') comprises the

step of additionally basing the calculation of the queue weights on the preemption

values (see column 8 lines 13 – 18, 34, column 9, lines 29 – 37, wherein the values of

W1 and W2 are modified correspond to the queue weights) as recited in claim 11.

Thus, it would have been obvious to a person of ordinary skill in the art at the time of invention to use the bandwidth allocation adaptor additionally has a set of preemption values (P) as an input, wherein the queue weights are additionally based on the set of preemption values as recited in claim 5; receiving preemption values (P); and wherein the step of calculating the queue weights (B') comprises the step of additionally basing the calculation of the queue weights on the preemption values as recited in claim 11 in the method taught by Giroux et al. in order to provide a more fair relationship between the preemption values of different queues (see Firoui et al. column 9, lines 36 – 37).

Regarding claim 13, 14, Giroux et al. disclosed a method comprising:

receiving channel conditions (o) (see column 3, lines 53 – 57, wherein the Queue Grow Rate of output queue, the arrival rate correspond to channel quality information); receiving original queue weights (B) (see column 3, lines 20 – 22, wherein minimum Weight table corresponds to original queue weights); and calculating modified queue weights (B') based on o and B (see column 4, lines 5 – 7, wherein the queue weights, Wi, correspond to modified queue weights, line 15, 35 – 40) as recited in claim 13,

outputting B' to a packet scheduler, wherein the packet scheduler utilizes B' for scheduling packets as recited in claim 14 (see column 4, lines 41 – 44, wherein the Weight Fair Queuing scheduler corresponds to a packet scheduler).

Giroux et al. fail to teach receiving preemption values (P); calculating modified queue weights (B') based on P as recited in claim 13.

Firoiu et al. from the same or similar field of endeavors teach receiving

preemption values (p) (see column 7, lines 53 – 56, column 9, lines 10 – 20, wherein P1

the average drop rate of the loss sensitive buffer, P2 the average drop rate of the delay

sensitive buffer correspond to the preemption values); calculating modified queue

weights (B') based on P (see column 8 lines 13 – 18, 34, column 9, lines 29 – 37,

wherein the values of W1 and W2 are modified correspond to modified queue weights).

Thus, it would have been obvious to a person of ordinary skill in the art at the

time of invention to use receiving preemption values (P); calculating modified queue

weights (B') based on P in the method taught by Giroux et al. in order to provide a more

fair relationship between the preemption values of different queues (see Firoui et al.

column 9, lines 36 – 37).

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Freed et al. (US 6996062) and Aweya et al. (US 6961307) are

cited to show methods which are considered pertinent to the claimed invention.Any

inquiry concerning this communication or earlier communications from the examiner

should be directed to Benjamin Su whose telephone number is 571-270-1423. The

examiner can normally be reached on Monday - Friday 10 - 3 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BZS

KWANG BIN YAO
PRIMARY EXAMINER